



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/668,644	09/23/2003	Dale A. Harrison	METR:004	2039
7590 06/09/2006 O'KEEFE, EGAN & PETERMAN, L.L.P. Building C, Suite 200 1101 Capital of Texas Highway South Austin, TX 78746			EXAMINER LEE, HWA S	
			ART UNIT 2877	PAPER NUMBER

DATE MAILED: 06/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

H.A

<b>Office Action Summary</b>	<b>Application No.</b> 10/668,644	<b>Applicant(s)</b> HARRISON, DALE A.	
	<b>Examiner</b> Andrew Hwa S. Lee	<b>Art Unit</b> 2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-88 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 37-74 is/are allowed.
- 6) ☒ Claim(s) 1-36, 75 and 80-83 is/are rejected.
- 7) ☒ Claim(s) 76-79 and 84-88 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>8pgs.</u> | 6) <input type="checkbox"/> Other: ____.  |

## DETAILED ACTION

### *Information Disclosure Statement*

1. The information disclosure statement filed 6/14/04 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. **Claims 8, 17, 45, and 53, 23-24, and 26-36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

Claims 8, 17, 45, and 53 include apertures in the form of motorized fully reflecting mirrors. Since the word aperture implies a hole, it is unclear how the apertures could be fully reflecting mirrors. In addition, it is unclear if the first, unknown, and/or calibration samples are meant to be in the reference or sample paths (claims 23-24, 26-32). With regards to the use of the term "unknown sample," it appears that certain aspects of the sample is unknown rather than completely not knowing anything about the sample, and the claims will be examined as such.

### *Claim Rejections - 35 USC § 102*

Art Unit: 2877

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. **Claims 1-13, 17 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Kotidis et al (US 5,781,304).**

As to claims 1-8, 10-13, 17 and 20 Kotidis discloses a laser ultrasonics-based material analysis system the method comprising:

a light source (laser diode, 22) to create a sample channel light path (28b);

at least one reference channel light path (28a) that does not encounter a sample;

at least one optical element (80, 82) enabling or disabling the reference or sample light

path:

a plurality of reflectometer system elements (see fig. 4) shared by both the sample and reference light paths; and

wherein the reference channel light path collects data that may be utilized to account for system or environmental changes to adjust the reflectance data obtained (col . 5, line 48-col. 6, line 15. col. 6, lines 32-52. and col. 8, lines 10-52).

Art Unit: 2877

As to claims 2-4, 8, 17, Kotidis discloses everything claimed, as applied above, in addition a beam may be used to establish the reference and sample light paths (see fig. 4 and col. 8, lines 64-68).

As to claim 5, Kotidis discloses everything claimed, as applied above, in addition the beam splitter is (28) is partially transmissive and the shutters are fully reflective (see fig. 2 and fig. 4) splitter (28) or shutters (20 and 82)

As to claims 6-7, 9, 12-13, Kotidis discloses everything claimed, as applied above, in addition the reference and sample channel light paths comprise balanced arms of an interferometer (col. 8, lines 52-60).

As to claims 10, Kotidis discloses everything claimed, as applied above, in addition the device is compact (col. 2, lines 19-25).

As to claim 20, Kotidis discloses everything claimed. as applied above. in addition the reference channel path does not encounter an unknown sample or a calibration sample (col. 6, lines 32-47).

**5. Claims 11, 14, 21-25, 27-36, 75, are 80-83 are rejected under 35 U.S.C. 102(e) as being anticipated by Nawracala (US 2001/0055118 A1).**

Art Unit: 2877

As to claim 11, Nawracala discloses a self-calibrating measuring set-up for interference spectroscopy, comprising:

a light source (23) to create a sample channel light path (30) that encounters a sample;  
means for referencing the reflectometer to enable an adjustment of reflectance data obtained from the sample to account for reflectometer changes (paragraph 39),  
wherein the means for referencing includes a reference channel light path (31).

As to claim 14, Nawracala discloses everything claimed, as applied above, in addition one or more splitter devices (29) are used and the light is directed to common portions of a diffraction element (41, see fig. 2 ).

As to claim 22-25, Nawracala discloses a self-calibrating measuring set-up for interference spectroscopy, comprising:

providing a sample optical channel (30), providing a reference optical channel (31), a calibration sample (44), sharing common optical elements (see fig. 2) including a diffraction grating (41) and detector (42);

utilizing the reference channel to obtain reference data with the detector, the reference data indicative of system parameters and reference the reflectance data and obtaining the data with the sample reflectance (paragraphs 39-42).

As to claims 27-29, Nawracala discloses everything claimed as applied above, in addition a calibration sample is measured before and after measurement of the sample (paragraph 30).

As to claim 33, Nawracala discloses that time can change calibration data (paragraph 6 and 7) and multiple calibrations being taken.

As to claims 75 and 80-83, Nawracala discloses a self-calibrating measuring set-up for interference spectroscopy, comprising:

- a light source (23) for providing a light beam;
- a plurality of optical elements to direct light from a two-dimensional sample area (25, 27, 29);
- a reference channel (31);
- an optical element selectively enabling or disabling one of the reference channel or sample channel (paragraph 39);
- a spectrometer (40) on both the sample and reference paths;
- an array detector (42) in the sample and reference paths;
- wherein the reference channel beam path collects data that may be used to account for system or environmental changes to adjust reflectance data (paragraph 39).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2877

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**9. Claims 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nawracala in view of Kotidis.**

As to claims 15-16, Nawracala discloses everything claimed, as applied above, with the exception of optical shutters as controllable apertures, however to do so is well known as taught by Kotidis. Kotidis discloses a laser ultrasonics-based material analysis system the method that includes the use of optical shutters as controllable apertures (col. 8. lines 64-68). It would have been obvious to one having ordinary skill in the art at the time of invention to use optical shutters to controllably direct along individual paths.



*Allowable Subject Matter*

10. Claims 37-74 allowed.

11. Claims 76-79, 84-88 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. The following is a statement of reasons for the indication of allowable subject matter:  
The prior art of record fails to show or to suggest a spectrometer having all the steps and elements as presently claimed wherein the spectrometer operates below deep ultra-violet (DUV) wavelengths.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Hwa S. Lee whose telephone number is 571-272-2419. The examiner can normally be reached on Tue-Fr.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley Jr. can be reached on 571-272-2800 ext 77. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2877

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Andrew Hwa Lee', with a stylized, flowing script.

Andrew Hwa Lee  
Primary Examiner  
Art Unit 2877